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ctacaatccc cagagtcagg gcgtcgtcga gtctatgaat aaggagttaa agaagattat 4260
cggccaggtc agagatcagg ctgagcatct caagaccgcg gtccaaatgg cggtattcat 4320
ccacaatttc aagcggaagg gggggattgg ggggtacagt gcgggggagc ggatcgtgga 4380
catcatcgcg accgacatcc agactaagga gctgcaaaag cagattacca agattcagaa 4440
tttccgggtc tactacaggg acagcagaaa tcccctctgg aaaggcccag cgaagctcct 4500
ctggaagggt gagggggcag tagtgatcca ggataatagc gacatcaagg tggtgcccag 4560
aagaaaggcg aagatcatta gggattatgg caaacagatg gcgggtgatg attgcgtggc 4620
gagcagacag gatgaggatt ag
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<210> 13
<211> 4353
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Arti
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<223> Description of Artificial Sequence: pSYNGP3-codon
 optimised HIV-1 gagpol with leader sequence from
 the major splice donor

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cagcgtgctg tcgggcggcg agctggaccg ctgggagaag atccgcctgc gccccggcgg 120
caaaaagaag tacaagctga agcacatcgt gtgggccagc cgcgaactgg agcgcttcgc 180
cgtgaacccc gggctcctgg agaccagcga ggggtgccgc cagatcctcg gccaactgca 240
gcccagcctg caaaccggca gcgaggagct gcgcagcctg tacaacaccg tggccacgct 300
gtactgcgtc caccagcgca tcgaaatcaa ggatacgaaa gaggccctgg ataaaatcga 360
```

agaggaacag aataagagca aaaagaaggc ccaacaggcc gccgcggaca ccggacacag 420 caaccaggtc agccagaact accccatcgt gcagaacatc caggggcaga tggtgcacca 480 ggccatctcc ccccgcacgc tgaacgcctg ggtgaaggtg gtggaagaga aggcttttag 540 cccggaggtg atacccatgt tctcagccct gtcagaggga gccaccccc aagatctgaa 600 caccatgctc aacacagtgg ggggacacca ggccgccatg cagatgctga aggagaccat 660 caatgaggag gctgccgaat gggatcgtgt gcatccggtg cacgcagggc ccatcgcacc 720 gggccagatg cgtgagccac ggggctcaga catcgccgga acgactagta cccttcagga 780 acagategge tggatgacea acaaceeace cateeeggtg ggagaaatet acaaaegetg 840 gatcatectg ggeetgaaca agategtgeg catgtatage cetaceagea teetggacat 900 ccgccaaggc ccgaaggaac cctttcgcga ctacgtggac cggttctaca aaacgctccg 960 cgccgagcag gctagccagg aggtgaagaa ctggatgacc gaaaccctgc tggtccagaa 1020 cgcgaacccg gactgcaaga cgatcctgaa ggccctgggc ccagcggcta ccctagagga 1080 aatgatgacc gcctgtcagg gagtgggcgg acccggccac aaggcacgcg tcctggctga 1140 ggccatgage caggtgacca acteegetae cateatgatg cagegeggea aettteggaa 1200 ccaacgcaag atcgtcaagt gcttcaactg tggcaaagaa gggcacacag cccgcaactg 1260 cagggcccct aggaaaaagg gctgttggaa atgtggaaag gaaggacacc aaatgaaaga 1320 ttgtactgag agacaggcta attttttagg gaagatctgg ccttcccaca agggaaggcc 1380 agggaatttt cttcagagca gaccagagcc aacagcccca ccagaagaga gcttcaggtt 1440 tggggaagag acaacaactc cctctcagaa gcaggagccg atagacaagg aactgtatcc 1500 tttagcttcc ctcagatcac tctttggcag cgacccctcg tcacaataaa qataqqqqq 1560 cagctcaagg aggctctcct ggacaccgga gcagacgaca ccgtgctgga ggagatgtcg 1620 ttgccaggcc gctggaagcc gaagatgatc gggggaatcg gcggtttcat caaggtgcgc 1680 cagtatgacc agatecteat egaaatetge ggecacaagg etateggtac egtgetggtg 1740 ggccccacac ccgtcaacat catcggacgc aacctgttga cgcagatcgg ttgcacgctg 1800 aacttcccca ttagccctat cgagacggta ccggtgaagc tgaagcccgg gatggacggc 1860 ccgaaggtca agcaatggcc attgacagag gagaagatca aggcactggt ggagatttgc 1920 acagagatgg aaaaggaagg gaaaatctcc aagattgggc ctgagaaccc gtacaacacg 1980 ccggtgttcg caatcaagaa gaaggactcg acgaaatggc gcaagctggt ggacttccgc 2040 gagetgaaca agegeaegea agaettetgg gaggtteage tgggeateee geaeeeegea 2100 gggctgaaga agaagaaatc cgtgaccgta ctggatgtgg gtgatgccta cttctccgtt 2160 cccctggacg aagacttcag gaagtacact gccttcacaa tcccttcgat caacaacgag 2220 acaccgggga ttcgatatca gtacaacgtg ctgccccagg gctggaaagg ctctcccgca 2280 atcttccaga gtagcatgac caaaatcctg gagcctttcc gcaaacagaa ccccgacatc 2340 gtcatctatc agtacatgga tgacttgtac gtgggctctg atctagagat agggcagcac 2400 cgcaccaaga tcgaggagct gcgccagcac ctgttgaggt ggggactgac cacacccgac 2460 aagaagcacc agaaggagcc teeetteete tggatgggtt acgagetgea eeetgacaaa 2520 tggaccgtgc agcctatcgt gctgccagag aaagacagct ggactgtcaa cgacatacag 2580 aagctggtgg ggaagttgaa ctgggccagt cagatttacc cagggattaa ggtgaggcag 2640 ctgtgcaaac tecteegegg aaccaaggea etcacagagg tgateeeet aacegaggag 2700 gccgagctcg aactggcaga aaaccgagag atcctaaagg agcccgtgca cggcgtgtac 2760 tatgacccct ccaaggacct gatcgccgag atccagaagc aggggcaagg ccagtggacc 2820 tatcagattt accaggagcc cttcaagaac ctgaagaccg gcaagtacgc ccggatgagg 2880 ggtgcccaca ctaacgacgt caagcagctg accgaggccg tgcagaagat caccaccgaa 2940 agcatcgtga tctggggaaa gactcctaag ttcaagctgc ccatccagaa ggaaacctgg 3000 gaaacctggt ggacagagta ttggcaggcc acctggattc ctgagtggga gttcgtcaac 3060 accecteece tggtgaaget gtggtaecag etggagaagg ageceatagt gggegeegaa 3120 accttctacg tggatggggc cgctaacagg gagactaagc tgggcaaagc cggatacgtc 3180 actaaccggg gcagacagaa ggttgtcacc ctcactgaca ccaccaacca gaagactgag 3240 ctgcaggcca tttacctcgc tttgcaggac tcgggcctgg aggtgaacat cgtgacagac 3300 teteagtatg ceetgggeat catteaagee cageeagace agagtgagte egagetggte 3360 aatcagatca tcgagcagct gatcaagaag gaaaaggtct atctggcctg ggtacccgcc 3420 cacaaaggca ttggcggcaa tgagcaggtc gacaagctgg tctcggctgg catcaggaag 3480 gtgctattcc tggatggcat cgacaaggcc caggacgagc acgagaaata ccacagcaac 3540 tggcgggcca tggctagcga cttcaacctg ccccctgtgg tggccaaaga gatcgtggcc 3600 agctgtgaca agtgtcagct caagggcgaa gccatgcatg gccaggtgga ctgtagcccc 3660 ggcatctggc aactcgattg cacccatctg gagggcaagg ttatcctggt agccgtccat 3720 gtggccagtg gctacatcga ggccgaggtc attcccgccg aaacagggca ggagacagcc 3780 tacttcctcc tgaagctggc aggccggtgg ccagtgaaga ccatccatac tgacaatggc 3840

```
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ttcgggatcc cctacaatcc ccagagtcag ggcgtcgtcg agtctatgaa taaggagtta 3960
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gcgaagctcc tctggaaggg tgagggggca gtagtgatcc aggataatag cgacatcaag 4260
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<210> 14
<211> 4327
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: pSYNGP4-codon
      optimised HIV-1 gagpol with 20bp of the leader
      sequence of HIV-1
<400> 14
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accgctggga gaagatccgc ctgcgccccg gcggcaaaaa gaagtacaag ctgaagcaca 120
tegtgtggge cageeggaa etggageget tegeegtgaa eeeegggete etggagaeea 180
gcgaggggtg ccgccagatc ctcggccaac tgcagcccag cctgcaaacc ggcagcgagg 240
agetgegeag cetgtacaac accgtggeea egetgtactg egtecaceag egeategaaa 300
tcaaggatac gaaagaggcc ctggataaaa tcgaagagga acagaataag agcaaaaaga 360
aggeccaaca ggeegeegeg gacaceggae acageaacea ggteageeag aactaceeea 420
tegtgeagaa cateeagggg cagatggtge accaggeeat eteceeege acgetgaaeg 480
cctgggtgaa ggtggtggaa gagaaggctt ttagcccgga ggtgataccc atgttctcag 540
ccctgtcaga gggagccacc ccccaagatc tgaacaccat gctcaacaca gtggggggac 600
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ctgggaggtt cagctgggca tcccgcaccc cgcagggctg aagaagaaga aatccgtgac 2100
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<212> RNA

<213> Human immunodeficiency virus type 1

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cagtcagatt tacccaggga ttaaggtgag gcagctgtgc aaactcctcc gcggaaccaa 2640
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agagateeta aaggageeeg tgeaeggegt gtaetatgae eeeteeaagg acetgatege 2760
cgagatccag aagcagggc aaggccagtg gacctatcag atttaccagg agcccttcaa 2820
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gctgaccgag gccgtgcaga agatcaccac cgaaagcatc gtgatctggg gaaagactcc 2940
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ggccacctgg attcctgagt gggagttcgt caacacccct cccctggtga agctgtggta 3060
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ggcagtagtg atccaggata atagcgacat caaggtggtg cccaqaagaa aqqcqaaqat 4260
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ggattag
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<211> 22
<212> RNA
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<223> Description of Artificial Sequence: Illustrative
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cugaugaggc cgaaaggccg aa
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<210> 28 <211> 22 <212> RNA <213> Human immunodeficiency virus type 1	
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2513 VICTITICIAL SEGUCING	

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<211> 34
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<210> 31
<211> 37
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Primer
<400> 31
cgcatagtcg acgggcccgc cactgctaga gattttc
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<210> 32
<211> 116
<212> DNA
<213> Artificial Sequence
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<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
<400> 32
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<210> 33
<211> 110
<212> DNA
<213> Artificial Sequence
<223> Description of Artificial Sequence: Synthetic
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<223> Description of Artificial Sequence: Synthetic
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aaatggtgaa gcaagaagga ttcgaacctt cgaagtcgat gacgtagccc
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<223> Description of Artificial Sequence: Synthetic
      oligonucleotide
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aaatggtgac cggtgaagga ttcgaacctt cgaagtcgat gacgttatac
<210> 37
<211> 116
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      oligonucleotide
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J	55	
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	2 2F 2F	
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		10
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<212>	•	
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	gagpol-SYNgp-codon optimised gagpol sequence	
	Jagper Grade obermined Jagber Bedgewee	
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gatga	ggatt ag	12
	12	
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<222> (1)..(7)
<223> Any nucleotide
<220>
<221> modified_base
<222> (56)..(61)
<223> Any nucleotide
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ncacca
<210> 49
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<212> RNA
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<220>
<221> modified base
<222> (1)..(7)
<223> Any nucleotide
<220>
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<222> (39)..(44)
<223> Any nucleotide
<400> 49
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<210> 50
<211> 13
<212> RNA
<213> Human immunodeficiency virus type 1
<400> 50
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